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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,367	09/30/2003	William D. Armstrong	W002.PAT-23	5226
7590	06/15/2005		EXAMINER	
EMERY L. TRACY P.O. Box 1518 Boulder, CO 80306			DINH, TIEN QUANG	
			ART UNIT	PAPER NUMBER
			3644	

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/674,367

Applicant(s)

ARMSTRONG ET AL.

Examiner

Tien Dinh

Art Unit

3644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17, 19-22, 24-31, 33, 34 and 37-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17, 19-22, 24-31, 33, 34 and 37-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Please note that there is no support for the claimed subject matters in claims 27, 28, 37, and 38.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 19, 24, 27, 28, 32, 35-38, 40-54 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The Examiner fails to understand how some of the claimed subject matter in claims 27, 28, and 37-38 work. The specification fails to disclose this.

In claim 19, it is not understood what resonant deformation of the columns mean. What columns is the applicant referring to? Where is it shown? Where is this disclosed?

Re claim 24, how does the system reduce vacuum pressure at local points on the wing and changing the coefficient of lift?

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The applicant is advised to review the claims in all their entirety to make sure that the claims are supported in the specification.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 17, 19, 20, 22, 24, 25, 29-31, 33, 34, 37, and 39, as best understood, are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Wygnanski.

Wygnanski discloses a method of controlling lift by using an oscillating aero surface 24, resonant frame inherently connected to actuator 16 to produce sinusoidal force on the resonant frame that results in resonant deformation in the resonant frame and resonant sinusoidal displacement of the aero surface.

Please note that it would have been obvious to one skilled in the art to have operated the system in a manner that would change the airflow around the wing so that the aircraft can fly as desired and efficiently.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wygnanski in view of Neff.

Wygnanski discloses all claimed parts except for the use of the linear voice coil actuator. However, Neff teaches that linear voice coil actuators are well known in the art.

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It would have been obvious to one skilled in the art at the time the invention was made to have used linear voice coil actuators in place of Wygnanski's actuator as taught by Neff as a substitution of parts.

Please note that it would have been obvious to one skilled in the art to have operated the system in a manner that would change the airflow around the wing so that the aircraft can fly as desired and efficiently.

Claims 26-28 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wygnanski in view of Lurz.

Wygnanski discloses all claimed parts except for the use of two devices and operating them independently. However, Lurz teaches that multiple devices that are operated independently are well known in the art.

It would have been obvious to one skilled in the art at the time the invention was made to have used multiple devices that are operated independently in Wygnanski's system as taught by Lurz to allow the wing to control the airflow efficiently.

Please note that it would have been obvious to one skilled in the art to have operated the system in a manner that would change the airflow around the wing so that the aircraft can fly as desired and efficiently.

Response to Arguments

In response to applicant's arguments that there are supports for the claimed subject matter, the Examiner respectfully disagrees. The applicant is writing with little details on how some of the claimed parts work. The lack of details would make it rather difficult for one skilled in the art to understand how the invention functions.

Concerning Wygnanski, please note that this patent does disclose what has been as claimed. A few example can be seen in figures 1a-1e. These figures show that the aero-surface is projected into the air which would disturb the smooth flow over the wing to cause local separation and vortex generation structures. Please note that the aero-surface oscillates (due to the drives as shown in figures 1a-1e), which causes the frame to resonate. The Neff patent is used to show that voice coils are very well known in the art. It is a mere substitution in parts to use a voice coil in Wygnanski's reference to produce resonant characteristic. Please note that the Lurz reference was used to show that multiple elements used together to control the boundary layer is well known in the art.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

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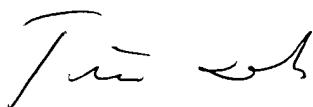
will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tien Dinh whose telephone number is 571-272-6899. The examiner can normally be reached on 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teri Luu can be reached on 571-272-7045. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TD

A handwritten signature in cursive script, appearing to read "Tien Dinh", is written below the typed name "TD".